WHAT IS CLAIMED IS:

1. A barycentric position measuring apparatus comprising:

a load receiving board,

a first sensor and a third sensor,

a second sensor and a fourth sensor,

selection switching means,

output difference conversion means,

a memory,

a barycentric position computation section, and

output means,

wherein

the load receiving board receives a load,

the first sensor and the third sensor are disposed at opposing two corners out of the four corners of the load receiving board so that the load is passed from the load receiving board and output a positive output,

the second sensor and the fourth sensor are disposed at the other opposing two corners out of the four corners of the load receiving board so that the load is passed from the load receiving board and output a negative output,

the selection switching means selects and switches a combination of the positive output from the first sensor and the negative output from the second sensor, a combination of the negative output from the second sensor and the positive output from the third sensor, a combination of the positive output from the third sensor and the negative output from the

fourth sensor, and a combination of the negative output from the fourth sensor and the positive output from the first sensor, the output difference conversion means determines the output differences of all the combinations selected and switched by the selection switching means,

the memory stores the output differences determined by the output difference conversion means,

the barycentric position computation section determines a first directional position based on a comparison of the data stored in the memory, i.e., a comparison of the output difference between the positive output from the first sensor and the negative output from the second sensor with the output difference between the positive output from the third sensor and the negative output from the fourth sensor and also determines a second directional position orthogonal to the first directional position based on a comparison of the data stored in the memory, i.e., a comparison of the output difference between the negative output from the second sensor and the positive output from the third sensor with the output difference between the negative output from the fourth sensor and the positive output from the first sensor, and

the output means outputs the first directional position and second directional position determined by the barycentric position computation section.

2. The apparatus of claim 1, wherein the selection switching means selects and switches a combination of the positive output from the first sensor and the negative output

from the second sensor, a combination of the negative output from the second sensor and the positive output from the third sensor, a combination of the positive output from the third sensor and the negative output from the fourth sensor, and a combination of the negative output from the fourth sensor and the positive output from the first sensor in turn.

3. The apparatus of claim 1, wherein the selection switching means selects and switches a combination of the positive output from the first sensor and the negative output from the second sensor, a combination of the positive output from the third sensor and the negative output from the fourth sensor, a combination of the negative output from the second sensor and the positive output from the third sensor, and a combination of the negative output from the fourth sensor and the positive output from the first sensor in turn.

4. The apparatus of any one of claims 1 to 3, wherein the barycentric position computation section computes a barycentric position (Gx, Gy) with respect to the x and y coordinate axes by substituting:

(x1, y1) which is the position of the first sensor with respect to the x and y coordinate axes,

(x2, y2) which is the position of the second sensor with respect to the x and y coordinate axes,

(x3, y3) which is the position of the third sensor with respect to the x and y coordinate axes,

(x4, y4) which is the position of the fourth sensor with respect

to the x and y coordinate axes,

wM1 which is the output difference between the positive output from the first sensor and the negative output from the second sensor,

wM2 which is the output difference between the negative output from the second sensor and the positive output from the third sensor,

wM3 which is the output difference between the positive output from the third sensor and the negative output from the fourth sensor, and

wM4 which is the output difference between the negative output from the fourth sensor and the positive output from the first sensor,

into the following expressions 1 and 2.

$$Gx = [\{(x2 + x3)/2\} \times wM2\} - \{(x1 + x4)/2\} \times wM4\}]/(wM2 + wM4) \quad \ldots (1)$$

$$Gy = [\{(y1 + y2)/2\} \times wM1\} - \{(y3 + y4)/2\} \times wM3\}]/(wM1 + wM3) \quad \ldots (2)$$

5. The apparatus of claim 1, further comprising a total load computation section which totals all the output differences stored in the memory so as to determine a total load.

6. The apparatus of claim 2, further comprising a total load computation section which totals all the output differences stored in the memory so as to determine a total load.

7. The apparatus of claim 3, further comprising a total

load computation section which totals all the output differences stored in the memory so as to determine a total load.

8. The apparatus of claim 4, further comprising a total load computation section which totals all the output differences stored in the memory so as to determine a total load.